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(54) Title: MAGNETIC STIMULATOR

(57) Abstract: At least two coils deliver at least two time-varying magnetic fields to a target region within a body. The coils are oriented such that the magnetic fields create intersecting electric fields in the target region. The magnetic fields operate at different frequencies and thus produce a beat frequency signal where the electric fields intersect. The frequencies are chosen so a time-varying electric field, or a current induced by a time-varying magnetic field, alternating at the beat frequency would stimulate excitable tissue located in the target region. Some embodiments utilize a novel coil, which includes a first conductor and at least one second conductor electrically connected to the first conductor at a point. The second conductor extends from the point of connection with the first conductor to a location spaced from the first conductor. At least a portion of the second conductor adjacent the point of connection with the first conductor is non-parallel to the first conductor.